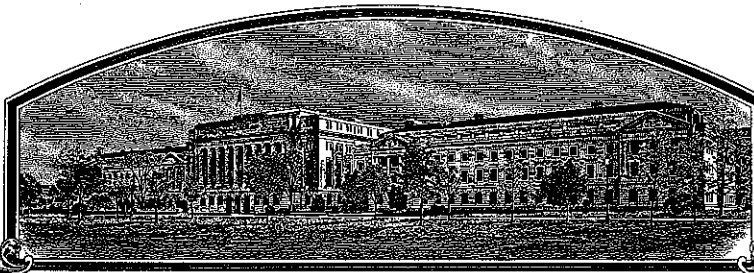


No.

200800017



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Seminis Vegetable Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC SUPPLEMENTATION OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PROPAGATING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN, GARDEN

'Banga'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of February, in the year two thousand and eight.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

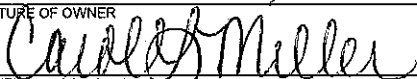
Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Seminis Vegetable Seeds, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME RS 08011265	3. VARIETY NAME BANGA
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 2700 Camino del Sol Oxnard, CA 93030-7967		5. TELEPHONE (include area code) (805) 647-1572	FOR OFFICIAL USE ONLY PVPO NUMBER #2008000017 FILING DATE OCTOBER 30, 2007
		6. FAX (include area code) (805) 918-2545	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation	8. IF INCORPORATED, GIVE STATE OF INCORPORATION California	9. DATE OF INCORPORATION 4 June 1962	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)			FILING AND EXAMINATION FEES: \$ 4,382.00 DATE 10/30/07 CERTIFICATION FEE: \$ 768.00 DATE 1-18-2008
Carol Miller Seminis Vegetable Seeds, Inc. 37437 State Hwy 16 Woodland, CA 95695			
11. TELEPHONE (Include area code) (530) 669-6274		12. FAX (Include area code) (530) 669-6112	13. E-MAIL carol.l.miller@seminis.com
14. CROP KIND (Common Name) Garden Bean	16. FAMILY NAME (Botanical) Leguminosae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP Phaseolus vulgaris L.	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)			

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) Carol L. Miller		NAME (Please print or type)	
CAPACITY OR TITLE PVP Specialist	DATE 26 Oct 07	CAPACITY OR TITLE	DATE

(See reverse for instructions and information collection burden statement)

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPIndex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

First Sales: Germany 01-Apr-04; France 01-Mar-05; Belgium 01-Mar-05; Netherlands 01-May-05; Canada 01-Dec-05; China 01-Apr-06; Italy 01-Apr-06; United States 01-Nov-06; Austria 01-May-07

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

EU PVP # 19232 Granted on 19-Feb-07

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

EXHIBIT A

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Origin and Breeding History of Bean, 'BANGA' (RS 08011265)

Banga was developed by using pedigree breeding selection methods at Seminis Vegetable Seed's Northern European Breeding Stations for open field crops in Wageningen, The Netherlands and Guerbigny (France). It originates from a hand pollinated cross between the varieties Ottawa (Seminis) and Booster (Vilmorin). Both varieties have been registered in Europe and are publicly known.

Parent A: Ottawa (lot 96/223). This is a productive variety with uniform dark green pods, grading between 6.5 and 9 mm, Halo Blight resistant, Anthracnose resistant, medium upright plant type, medium heat set. In the U. S. market the grading distribution of "Ottawa" would place it in a "Three Sieve" whole or cut class.

Parent B: Booster (lot 97/162). This variety has a very upright plant type, medium green pods, grading between 5 and 7 mm, and good heat set. It is used in the Processor markets in Europe. In the U.S. market the grading distribution of "Booster" would place it in a "Two Sieve" whole bean class.

The initial cross was made in the greenhouse in the fall of 1997. After 8 generations of selfing and pedigree selection, a line was selected that had a "Two Sieve" distribution (grading between 6 and 8 mm), that combined good yield, upright plant type, dark green pods, and anthracnose resistance.

Breeding / Selection / Evaluation Scheme:

Year	Season	Gen	Location	Description
1997	Fall	AxB	Greenhouse	Cross made between lots 96/223 and 97/162.
1998	Spring	F1	Greenhouse	F1 seeds planted and 500 seeds were harvested from F1 plants
1998	Summer	F2	Field: Guerbigny, France	Population of 500 F2 plants were planted. 43 F3 selections were made and harvested as single plant selections.
1998	Winter	F3	Field: Mellipilla, Chile	The 43 selections were planted in Chile, 45 plants per selection. 6 lines were selected and harvested as a bulk. This resulted in 6 bulked families.
1999	Summer	F4	Field: Guerbigny France	Bulked families were planted on 3 different dates. 60 seeds were planted from each bulked family on each planting date. Plot number 8936 was noted for its superior performance. 8 single plants were subsequently harvested from plot 8936 and designated as NBE 8936.
1999	Winter	F5	Field: Mellipilla, Chile	Seeds (45) of each F4 single plant selection from plot number NBE 8936 were planted as a single row observation / selection. Plot number 7840 was selected for overall horticultural characteristics. The plot was bulked and designated RCG 7840
2000	Summer	F6	Fields: France	Bulk seed (RCG 7840) was tested at various sites in France and evaluated for horticultural and agronomic performance.
2000	Summer	F6	Field: Guerbigny, France	45 seeds of RCG 7840 were planted under stake number 71566. Based on multi-site evaluations 7 single plant selections were made at Guerbigny and designated as RZL 71566-(n) and the remainder of the plants harvested as a bulk.

3

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2000	Winter	F7	Field: Mellipilla, Chile	Seeds (45) from each of the 7 single plant selections from RZL 71566 were planted as a single row observation / selection. The row derived from single plant selection # 1 was selected and harvested as a bulk. The bulked seed was coded as NBG 316
2001	Summer	F8	Field: Guerbigny, France	NBG 316 was placed in processor trials and selected for a advancement as a VF type. 10 single plants were selected and designated as 01/30316. bulk was then designated RS 08011265.
2001	Fall	F9	Greenhouse: Wageningen, Holland	Seed from each 01/30316 single plant selection was tested for resistance to Halo Blight and Anthracnose and found to be resistant to both diseases. Seed of each single plant selection was planted in the greenhouse and examined for uniformity. 45 single plants were harvested.
2002	Spring	F10	Greenhouse: Wageningen, Holland	2 to 3 plants from each of the 45 F9 plants were planted in the greenhouse and examined for uniformity. 114 lines were harvested and transferred to the Foundation Seed Program in Wageningen, Holland.
2002	Summer	F11	Field: Wageningen, Holland	All 114 lines were planted out and screened for uniformity. No variants were found. 60 single plants were harvested for basic seed.
2002	Fall	F12	Greenhouse: Wageningen, Holland	All 60 single plant selections were tested for resistance to Halo Blight and Anthracnose. All 60 selections were resistant to both Halo Blight and Anthracnose.

Observations during 5 generations of multiplication and increases in the Netherlands, Chile and California indicated that BANGA was uniform and stable for plant habit, maturity, pod type, and other horticultural and agronomic characteristics. Observations during the two (2) years of 2001 and 2002 (5 generations) confirm that BANGA is uniform and stable within commercially acceptable limits. As is true with other garden beans, a very small percentage of mutations or variants for flat pods or string may occur during repeated replication. BANGA was within the commercially acceptable limits of .1% (for flat pods) and .01% (for string) for this type of mutation / variant.

4

EXHIBIT B

Statement of Distinctness for Bean, 'BANGA' (RS 08011265)

BANGA (RS 08011265) is a green snap bean for processing developed by pedigree selection for use in the European Processor market as an European Very Fine (VF) class. Our observations have been that **BANGA** also has potential use in the North American Processor Market as a Two Sieve Whole bean.

To our knowledge, the variety that most closely resembles **BANGA** is **Masai** from Syngenta (US PVP # 9300155). **Masai** is considered an industry standard for the Two Sieve class. The comparative characteristic that most readily distinguish the two varieties includes but may not be limited to the presence of the CO2 allele which provides resistance to Alpha, Delta, Gamma, and Lambda races of Anthracnose. The CO2 allele is present in **BANGA** while the CO2 allele is absent in **Masai**. No statistical analysis is required for this comparison.

Booster, marketed by Vilmorin in Europe, is one of the parents in this cross. **Booster** is a European Processor bean in the VF class. To our knowledge **Booster** has never been marketed in the United States and has not been included in our North American trials. The comparative characteristic that most readily distinguish the two varieties includes but may not be limited to the presence of the CO2 allele which provides resistance to Alpha, Delta, Gamma, and Lambda races of Anthracnose. The CO2 allele is present in **BANGA** while the CO2 allele is absent in **Booster**. No statistical analysis is required for this comparison.

The other parent used in the development of **BANGA** was **Ottawa** sold and marketed by Seminis Vegetable Seeds in the Three Sieve bean market segment. As a Three Sieve bean **Ottawa** is not acceptable in the Two Sieve market segment. **Ottawa's** lack of agronomic adaptation in North America has limited additional comparisons.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Garden Bean (*Phaseolus vulgaris* L.)

NAME OF APPLICANT (S) Seminis Vegetable Seeds Inc.	TEMPORARY OR EXPERIMENTAL DESIGNATION RS08011265	VARIETY NAME BANGA
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) 2700 Camino del Sol Oxnard, CA 93030		FOR OFFICIAL USE ONLY PVPO NUMBER #200800017

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g., 099 or 09) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties centered in the same trial. Measured data should be for SPACED PLANTS. Ranges should also be given. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: RHS. Please answer all questions for your variety; lack of response may delay progress of your application.

1. TYPE:

☐ 1 = Garden ☐ 2 = Flageolet ☐ 3 = Romano (SNAP)

2. MARKET MATURITY:

<input type="text" value="57"/> Days to Edible Pods	<input type="text" value="8"/> } Comparison Variety	Comparison Varieties
<input type="text" value="1425"/> Heat Units to Edible Pods		1 = Tender crop
<input type="text"/> Number of Days Earlier Than		2 = Kentucky Wonder
<input type="text"/> Same As		3 = Gold rush
<input type="text"/> Number of Days Later Than		4 = Slenderette
		5 = Gitana
		6 = Provider
		7 = Bush Blue Lake 290
		8 = Other (Specify Below) <u>MASAI</u>

3. PLANT:

cm Spacing Between Plants in a Row

Habit 1 = Determinate
2 = Indeterminate, Erect Stem and Branches
3 = Indeterminate with Weak and Prostrate Stem and Branches
4 = Indeterminate Climbing Habit with Weak, Long, and Twisted Stem and Branches

cm Height

cm Shorter Than } Comparison Variety

Same Height As

cm Taller Than

Use Comparison Varieties from Section 2

3. PLANT: (continued)

51

cm Spread

cm Narrower Than

Same Width As

10

cm Wider Than

8

Comparison Variety

Use Comparison Varieties from Section 2

3

Pod Position: 1 = Low 2 = High 3 = Scattered

1

Bush Form (Illustrated Below)



1 = Spherical Bush Form



2 = Stem Bush Form



3 = Wide Bush Form



4 = High Bush Form

5 = Other (Specify) _____

4. LEAVES:

3

Surface: 1 = Dull 2 = Glossy 3 = Indeterminate

1

Size: 1 = Small (Gitana) 2 = Medium 3 = Large (Tender Crop)

3

Color: 1 = Light Green (as Light or Lighter than Gold Rush)
2 = Medium Green
3 = Dark Green (as Dark or Darker than Bush Blue Lake 290)

5. ANTHOCYANIN PIGMENT:

(1 = Absent

2 = Present)

1

Flowers

1

Stems

1

Pods

1

Seeds

1

Leaves

1

Petioles

1

Peduncles

1

Nodes

6. FLOWER COLOR AND DAYS TO BLOOM:

1

Color of Standard

2

Color of Wings

1

Color of Keel

53

Days to 50% Bloom

Flower Color Choices

1 = White 2 = Cream

3 = Pink 4 = Lilac

5 = Purple 6 = Blue

7 = Other (Specify) _____

7. PODS (Edible Maturity):

2

Exterior Color:
(Fresh)

1 = Light Green (as Light or Lighter than Provider)

2 = Medium Green

3 = Dark Green (as Dark or Darker than Bush Blue Lake 290)

4 = Yellow (Gold Rush)

5 = Green-red Variegated (Horticultural)

6 = Other (Specify) _____

1

Processed Pods (Exterior Color):

1 = Light (Tender Crop)

2 = Dark (Bush Blue Lake 290)

1

Dry Pod Color:

1 = Buckskin (Sprite)

2 = Green, Persistent Chlorophyll (Hystyle)

7. PODS (continued):

3

Cross Section Pod Shape:
(Middle of the Pod)

1 = Flat

2 = Heart (Pear)

3 = Round

4 = Figure Eight



2

Crease Back:

1 = Present

2 = Absent

2

Pubescence:

1 = None (Slenderette)

2 = Sparse

3 = Considerable (Provider or Sprite)

2

Constriction (Interocular Cavitation):

1 = None 2 = Slight 3 = Deep

10

mm Spur Length

2

Fiber:

1 = None (Bush Blue Lake 290)

2 = Sparse

3 = Considerable (Sprite)

7

Number of Seeds per Pod

2

Suture String:

1 = Present

2 = Absent

2

Seed Development: 1 = Slow (Bush Blue Lake 290)

2 = Medium

3 = Fast (Provider)

1

Machine Harvest:

1 = Adapted

2 = Not Adapted

Percent sieve size distribution at optimum maturity for not-flat pods

4.76 to 5.76mm	5.76 to 7.34mm	7.34 to 8.34mm	8.34 to 9.53mm	9.53 to 10.72 mm	>10.72mm
← 85 % →	%	15 %	0 %	0 %	0 %

3 Sieve



cm Length



mm width



Total mm Thickness

4 Sieve



cm Length



mm width



Total mm Thickness

5 Sieve



cm Length



mm width



Total mm Thickness

6 Sieve



cm Length



mm width



Total mm Thickness

8. SEED COLOR:

3

Seed Coat Luster:

1 = Shiny 2 = Dull

3 = Semi-Shiny

4 = Variable

1

Seed Coat:

1 = Monochrome

2 = Polychrome

01

Primary Color:

1 = White

2 = Yellow

3 = Buff

4 = Tan

5 = Brown

6 = Pink

7 = Red

8 = Purple

9 = Blue

10 = Black

11 = Other



Secondary Color:

1 = White

2 = Yellow

3 = Buff

4 = Tan

5 = Brown

6 = Pink

7 = Red

8 = Purple

9 = Blue

10 = Black

11 = Other

1

Seed Coat Pattern:

1 = Solid

1 = Splashed

3 = Mottled

4 = Striped

5 = Flecked

6 = Dotted

1

Hilar Ring:

1 = Absent

2 = Present



Hilar Ring Color:

1 = White

2 = Yellow

3 = Buff

4 = Tan

5 = Brown

6 = Pink

7 = Red

8 = Purple

9 = Blue

10 = Black

11 = Other

9. SEED SHAPE AND SIZE:

1

Hilum View:



1 = Elliptical



2 = Oval



3 = Round

2

Cross Section:

1 = Elliptical

2 = Oval

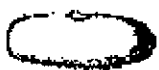
3 = Cordate

4 = Round

9. SEED SHAPE AND SIZE: (continued)

1

Side View:



1 = Oval to Oblong

2 = Round

3 = Reniform

24

gm/100 Seeds

05

gm/100 Seeds Lighter Than

8

gm/100 Seeds Same As

Comparison Variety

gm/100 Seeds Heavier Than

10. DISEASE RESISTANCE: 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

2

Anthracnose (*Colletotrichum lindemuthianum*)

2

Race Alpha

0

Race Beta

2

Race Gamma

2

Race Delta

0

Race Epsilon

2

Race Lambda

0

Race Kappa

Specify Race

CO-2 gene

1

Bean Rust (*Uromyces appendiculatus*)

Race 38

Race 39

Race 40

Race 44

Race 45

Race 46

Race 49

Race 50

Race 51

Race 52

Race 54

Race 56

Race 59

Specify Race

0

Powdery Mildew (*Erysiphe polygoni*)

0

Fusarium Root Rot (*Fusarium solani* f. sp. *phaseoli*)

0

Pythium Root Rot (*Pythium* spp.)

1

Aphanomyces Root Rot (*Aphanomyces euteiches*)

0

Rhizoctonia Root Rot (*Rhizoctonia solani*)

0

Pythium Blight or Aerial Pythium (*Pythium ultimum*)

0

Angular Leaf Spot (*Isariopsis griseola*)

0

Bacterial Wilt (*Corynebacterium flaccumfaciens* subsp. *flaccumfaciens*)

2

Bacterial Brown Spot (*Pseudomonas syringae* pv. *syringae*)

0

Common Bacterial Blight (*Xanthomonas campestris* pv. *phaseoli*)

1

Halo Blight (*Pseudomonas syringae* pv. *phaseolicola*)

Race 1

Race 2

1

Clover Yellow Vein Virus (CYVV)

2

Bean Common Mosaic Virus (BCMV)

BV1

NY15

NL2

NL3

NL4

NL8

Florida

Idaho

Mexican

Western

Type

2

Other (Specify)

BCMV "I" gene

0

Yellow Bean Mosaic Virus (BYMV)

0

Curly Top Virus (BCTV)

Other (Specify Disease and Race or Strain)

N/A

11. INSECT RESISTANCE: 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

- | | |
|---|---|
| <input type="checkbox"/> Aphid | <input type="checkbox"/> Root Knot Nematode |
| <input type="checkbox"/> Leafhopper | <input type="checkbox"/> Seed Corn Maggot |
| <input type="checkbox"/> Lygus | <input type="checkbox"/> Thrips |
| <input type="checkbox"/> Pod Borer | <input type="checkbox"/> Weevils |
| <input type="checkbox"/> Other (Specify) <u>N/A</u> | |

12. PHYSIOLOGICAL RESISTANCE: 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

- | | | |
|---|--------------------------------|----------------------------------|
| <input type="checkbox"/> Heat | <input type="checkbox"/> Cold | <input type="checkbox"/> Drought |
| <input type="checkbox"/> Air Pollution | <input type="checkbox"/> Ozone | |
| <input type="checkbox"/> Other (Specify) <u>N/A</u> | | |

13. COMMENTS:

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) Seminis Vegetable Seeds, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER RS 08011265	3. VARIETY NAME BANGA
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 2700 Camino del Sol Oxnard, California 93030	5. TELEPHONE (Include area code) (805) 647-1572	6. FAX (Include area code) (805) 918-2545
7. PVPO NUMBER #2008000017		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

The variety named in this application was developed by the Seminis Vegetable Seeds, Inc., employee (breeder) identified below. By agreement between the employee and Seminis Vegetable Seeds, Inc., all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such an invention, discovery, or development are retained by the employee.

Employee (Breeder): Ken Kmiecik

Site Location: DeForest, WI

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S) Seminis Vegetable Seeds, Inc.	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 2700 Camino del Sol Oxnard, CA 93030	TEMPORARY OR EXPERIMENTAL DESIGNATION RS 08011265
NAME OF OWNER REPRESENTATIVE (S) Carol L. Miller	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 2700 Camino del Sol 37437 State Highway 16 Oxnard, CA 93030 Woodland, Ca 95695	VARIETY NAME BANGA FOR OFFICIAL USE ONLY PVPO NUMBER #2008000017

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Signature

Carol L. Miller

Date

26 Oct 07

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